

HAND DRIER

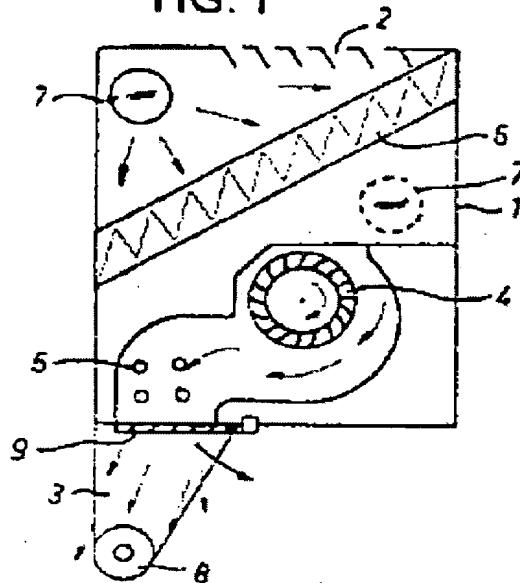
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- US4087925 (A1)
- FR2333479 (A1)
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Report a data error here**Abstract of GB1531309**

1531309 Hand drier A BIENEK 23 Nov 1976 [6 Dec 1975] 48700/76 Heading A5R [Also in Division F4] A hand drier, of the type in which a fan 4 and a heating device 5 are arranged in a housing 1 having an air inlet aperture 2 and an air outlet aperture 3, is provided with a glass-fibre pad 6 arranged in housing 1 between fan 4 and inlet aperture 2 where- by the pad 6 filters germs from the air. A sterilizer tube 7 may be provided on either side of the pad 6 to kill off germs held on the pad 6 and elsewhere within the housing. A spring-loaded flap 9 seated in aperture 3 is provided to close aperture 3 except when the fan is operating. A light barrier switch 8 is provided to control fan operation.

FIG. 1

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PATENT SPECIFICATION

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(54) HAND DRIER

(71) I. ARTUR BIENEK, a German National, of 35 Wilhelm-Leuschner-Strasse, Trier 5500, Germany, do hereby declare the invention, for which I pray that a patent may be granted to me, and the method by which it is to be performed, to be particularly described in and by the following statement:-

This invention concerns a hand drier of the type comprising a housing enclosing a fan which serves to draw air into the housing through an inlet and to expel said air by way of an outlet, after being heated by a heater within said housing.

In known hand driers equipped with electrically-operated fans, cool fresh air is drawn in from the room in which the hand drier is situated, is warmed in the hand drier, and is blown out in such a way that it can

pass onto the user's washed but still damp hands in order to dry said hands. When drawing-in room air, naturally all of the germs, which are present in the air and

which are really numerous, especially in toilet rooms where such hand driers are often to be found, are also drawn in and are blown as a concentrated stream onto the user's hands. The result of this, as recent tests have shown, is that the known hand driers are not hygienically satisfactory, but rather supply a great deal of bacteria.

An object of the present invention is to provide an improved hand drier of the type referred to.

With this object in view, the present invention provides a hand drier comprising a housing enclosing a fan which serves to draw air into the housing through an inlet and to expel said air by way of an outlet, after being heated by a heater within the housing, a glass fibre filter pad being arranged in the housing between the air inlet and the fan so that all of the air passes through the pad.

Preferably a steriliser tube is arranged in a space within the drier housing which is sepa-

rated from the fan by the glass fibre filter pad, or in a space within the drier housing between the glass fibre filter pad and the fan. The glass fibre filter pad may be arranged in obliquely inclined manner in the drier housing, and may be mounted in the drier housing so as to be releasable for easy exchangeability.

Advantageously, a light barrier switch, for switching the fan ON and OFF is arranged beside the air outlet aperture.

Preferably an outwardly swingable closure flap, which is biased towards its closed position, for example by virtue of a spring force or a weight, and which opens when the air coming from the fan exceeds a predetermined pressure threshold, is provided at the outlet.

A preferred embodiment of the hand drier of the invention will be described further, by way of example, with reference to the accompanying drawings, in which:-

Figure 1 is a diagrammatic side elevation of the said preferred embodiment of the hand dryer of the invention; and

Figure 2 is a plan view, with part cut away, of the hand drier of Figure 1.

The hand drier shown in the drawings consists of a drier housing 1 having an air inlet aperture 2 at its upper side and an air outlet aperture 3 at its underside. Enclosed within the drier housing 1 are a fan 4 and a heating device 5 which comprises heating wires.

Located between the air inlet aperture 2 and the fan 4 is an obliquely inclined glass fibre filter pad 6 through which all air drawn into the housing 1 through the inlet aperture 2 has to pass before it reaches the fan 4. Seated in that part of the housing 1 which is separated from the can 4 by the glass fibre filter pad 6 is a sterilisation tube 7 which kills off any germs, bacteria, bacillii or the like which may have entered, with the drawn-in air, into the interior of the housing

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1. As is indicated by broken lines in Figure 1, the sterilisation tube 7 can alternatively be arranged in the space between the glass fibre filter pad 6 and the fan 4. 45
- 5 The obliquely-inclined arrangement of the glass fibre filter pad 6 serves to enlarge the air-flow passage area therethrough as compared with the case where such a pad is arranged so as to be substantially perpendicular to the direction of airflow from the inlet aperture 2 to the fan 4. The glass fibre filter pad 6 is releasably mounted in the housing 1, in order to enable it to be exchanged for a new one after a period of use. 50
- 10 A light barrier switch 8 is provided near the air outlet aperture 3 in order to control the fan operation in known manner. 55
- 15 Disposed at the air outlet aperture 3 is an outwardly-swingable flap 9 which is mounted on the drier housing 1 by way of a hinge or the like. The flap is spring-loaded or weight-loaded, so that it keeps the air outlet aperture 3 closed. Only when the pressure of air coming from the fan 4 exceeds a predetermined threshold, value and overcomes the force of the spring or the weight does the flap 9 swing downwards to open the air outlet aperture 3. 60
- 20 This arrangement of the closure flap 9 ensures that, when the fan 4 is switched off, the interior of the housing 1 is closed, so that any germs present therein are reliably killed off by action of the steriliser tube 7. 65
- 25 30 WHAT I CLAIM IS:-
- 35 1. A hand drier comprising a housing enclosing a fan which serves to draw air into the housing through an inlet and to expel said air by way of an outlet, after being heated by a heater within the housing, a glass fibre filter pad being arranged in the 70
- 30 housing between the air inlet and the fan so that all of the air passes through the pad. 75
- 35 2. A hand drier as claimed in claim 1, in which a steriliser tube is arranged in a space within the drier housing which is separated from the fan by the glass fibre filter pad. 80
- 40 3. A hand drier as claimed in claim 1, in which a steriliser tube is arranged in a space within the drier housing between the glass fibre filter pad and the fan. 85
- 45 4. A hand drier as claimed in claim 1, 2 or 3, in which the glass fibre filter pad is arranged in obliquely inclined manner in the drier housing. 90
- 50 5. A hand drier as claimed in any preceding claim, in which the glass fibre filter pad is releasably mounted in the drier housing. 95
- 55 6. A hand drier as claimed in any preceding claim, in which a light barrier switch, for switching the fan ON and OFF, is provided adjacent the air outlet aperture. 100
- 60 7. A hand drier as claimed in any preceding claim, in which an outwardly swingable closure flap, which is biased towards its closed position and which opens when the air coming from the fan exceeds a predetermined pressure threshold, is provided at the outlet. 105
- 65 8. A hand drier as claimed in claim 7, in which the flap is biased by a spring or weight. 110
- 70 9. A hand drier substantially as herein described with reference to and as illustrated in the accompanying drawings. 115
- 75 For the Applicants
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1531309
1 SHEET

COMPLETE SPECIFICATION

This drawing is a reproduction of
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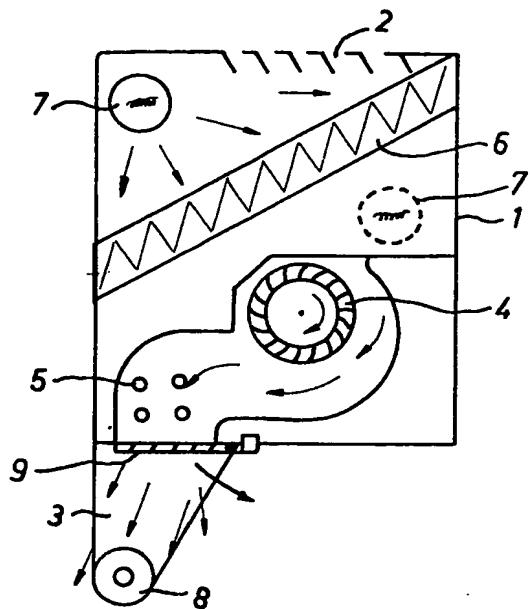


Fig. 1

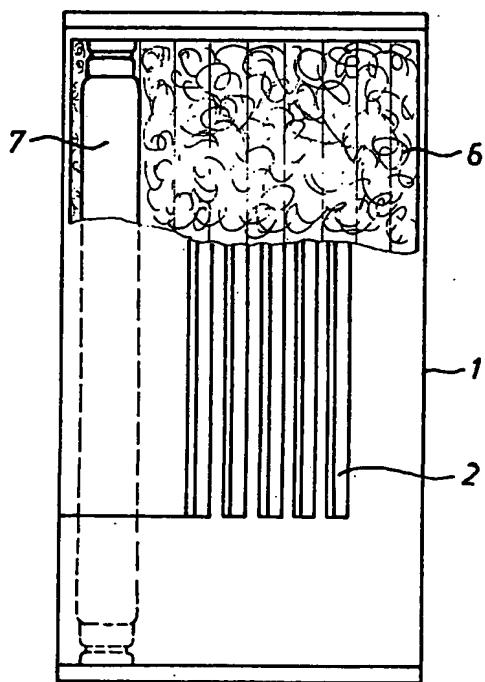


Fig. 2